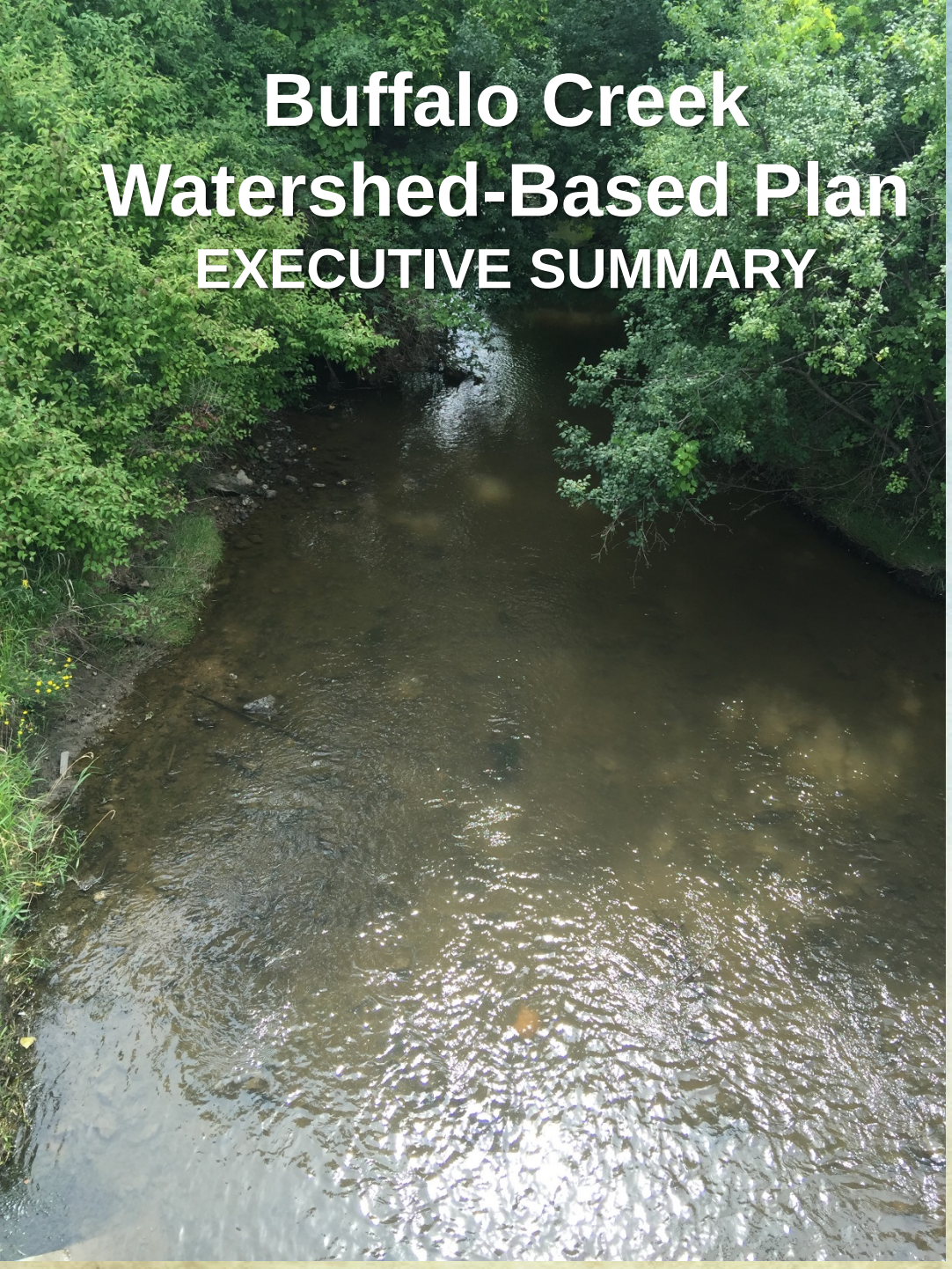
Buffalo Creek Watershed-Based Plan

EXECUTIVE SUMMARY

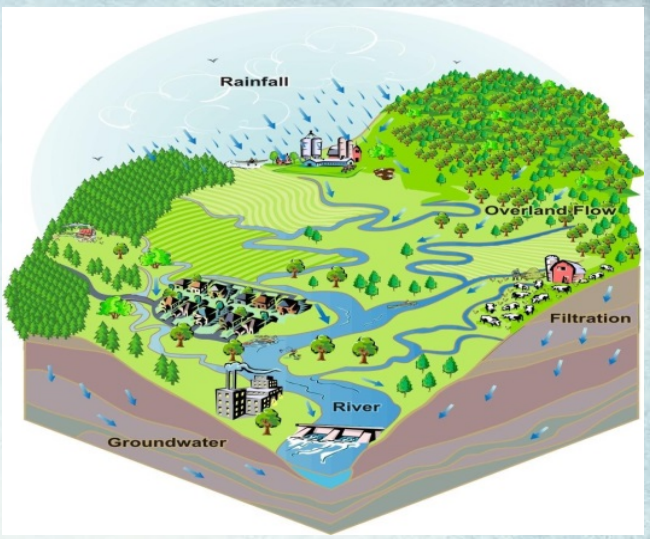


Prepared for
Buffalo Creek Clean Water Partnership
By Cardno
August 2015

Cardno
Shaping the Future

Buffalo Creek
Clean Water
Partnership

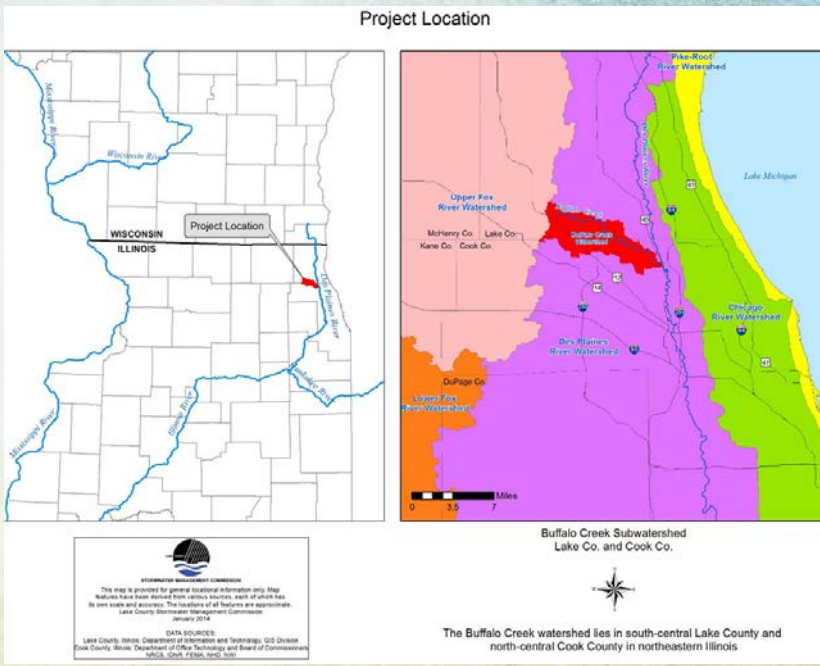
What you will find inside this Executive Summary



Source: Arkansas Watershed Advisory Group

Introduction

Each of us lives, works, and plays in a watershed. A watershed is the area of land drained by a river/stream system or a body of water. As simple as the definition sounds, a watershed is actually a complex interaction between ground, climate, water, vegetation and animals. In today's developed watersheds, other elements such as sewage, agricultural drainage, impervious surfaces (such as streets, parking lots, buildings), stormwater and erosion are can have detrimental effects on the health of a watershed. Buffalo Creek is a tributary of the Des Plaines River, located in Lake and Cook counties (see map, right).



The Buffalo Creek Watershed is approximately 11 miles long and 2.5 miles wide with a total drainage area of 26.8 square miles. The general orientation of the watershed slopes from the northwest to the southeast. Two tributaries, the North Branch and the South Branch, join together downstream of Albert Lake to form the main channel of Buffalo Creek in the northwest portion of the watershed. Buffalo Creek enters the Buffalo Creek Reservoir at the Long Grove/Buffalo Grove border just south of Checker Road. Another tributary named Tributary A originates in the Deer Grove Cook County Forest Preserve and enters the Buffalo Creek Reservoir from the south. Buffalo Creek exits the Buffalo Creek Reservoir via a spillway located at the southwest corner of Arlington Heights Road and Checker Road.

After Buffalo Creek crosses into Cook County, two more tributaries feed the main channel. Farrington Ditch enters from the north while White Pine Ditch joins from the southwest. Buffalo Creek continues through the Village of Buffalo Grove. When Buffalo Creek passes under the Wisconsin Central R.R. in the Village of Wheeling, it becomes the Wheeling Drainage Ditch. The Wheeling Drainage Ditch flows southeast until it reaches Wolf Road. It was rerouted north of Palwaukee Airport in the 19902 and flows to the Des Plaines River.

PURPOSE

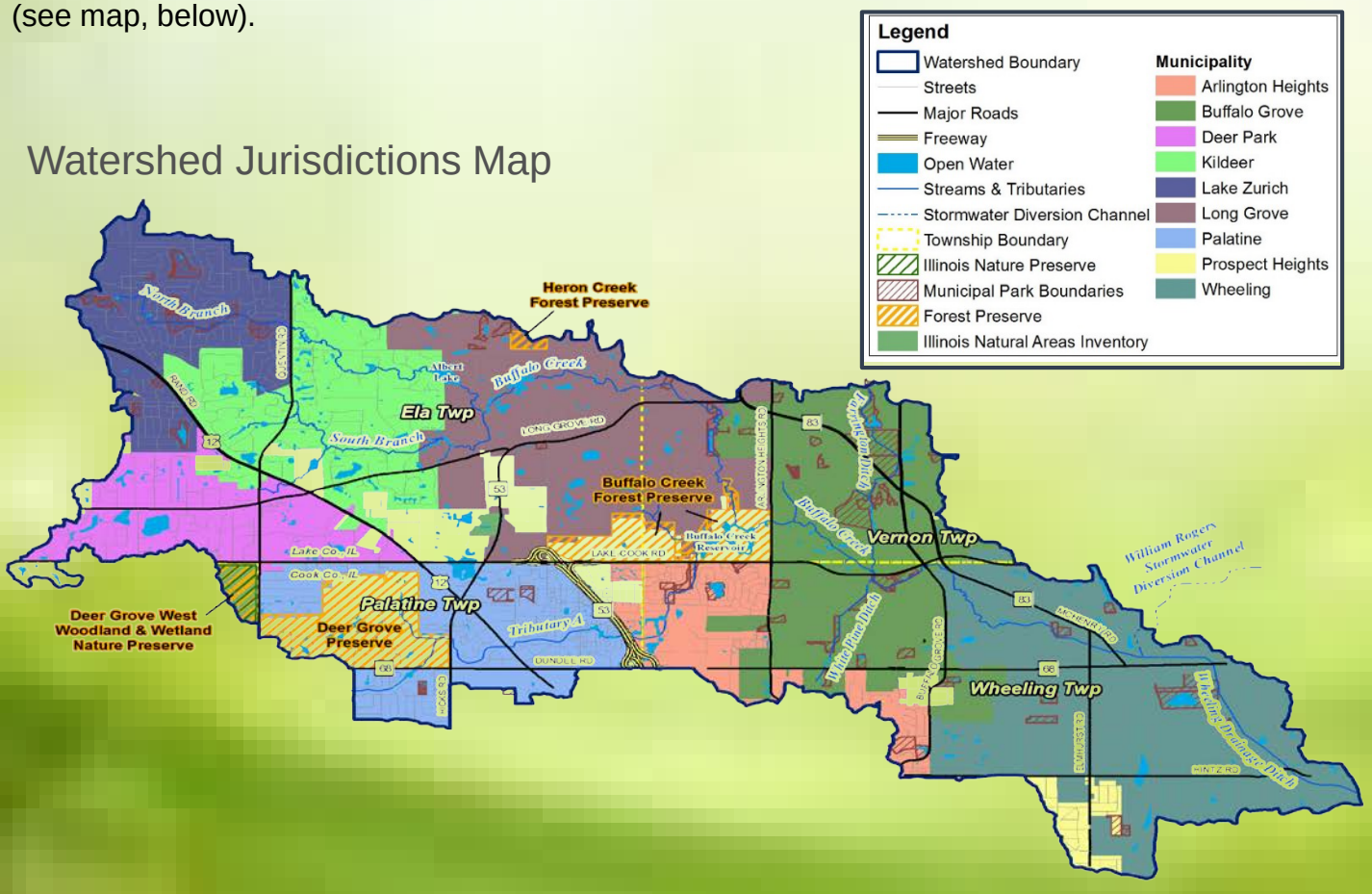
The first step toward improved water quality in the Buffalo Creek Watershed is the development of a Watershed-Based Plan. Watershed planning requires collaboration between local stakeholders to appropriately sustain and manage water resources. Watershed plans are a comprehensive approach to environmental protection that relies on science, policy and public involvement. Rather than focusing on single issues, watershed plans address multiple water quality issues under one program, thus taking a holistic approach of water resource management.

The goal of this effort was to come up with a plan to restore watershed lakes, streams, and wetlands to a healthy condition while reducing the impacts of water pollution on watershed residents. This process provided opportunities for watershed stakeholders to have a significant role in the process. A significant outcome of this planning effort and implementation of the plan going forward is to return the stream segments and watershed lakes that are presently listed as “impaired” on the Illinois 303(d) list of impaired waters to conditions that fully support their designated uses.

In 2012, the Buffalo Creek Clean Water Partnership (BCCWP) applied for and received funding from the Illinois Environmental Protection Agency through Section 319 of the Clean Water Act to undergo a volunteer planning effort to produce a comprehensive “Watershed-Based Plan” for the Buffalo Creek watershed. Projects identified in this plan become eligible for state and federal grants. All recommendations in this plan are for guidance only and not required by any federal, state, or local agency.

The primary jurisdictions in the watershed include the municipalities of Wheeling, Buffalo Grove, Long Grove, Kildeer, Palatine, Deer Park, Lake Zurich, Arlington Heights and Prospect Heights (see map, below).

Watershed Jurisdictions Map

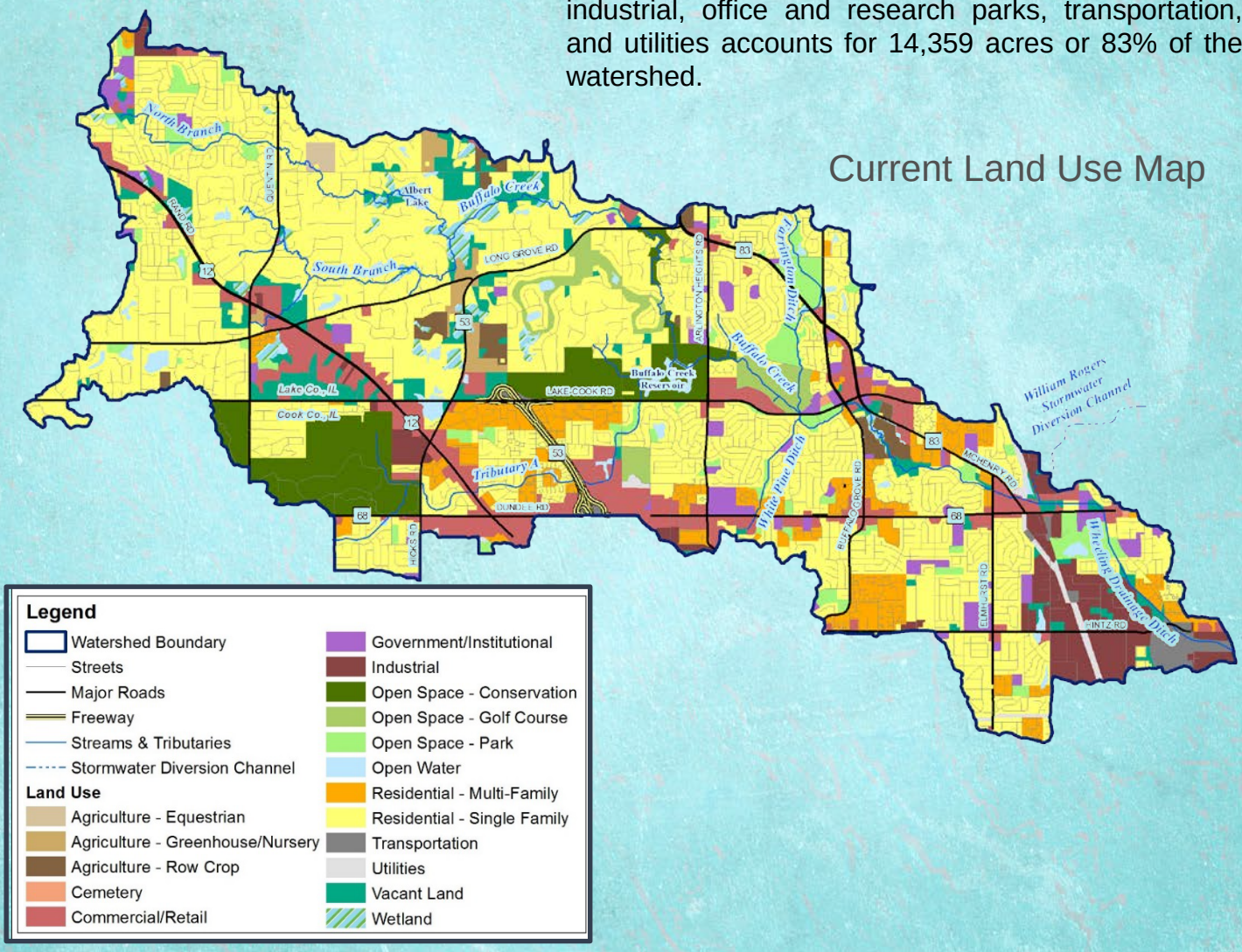


THE PAST

Pre-settlement vegetation within the Buffalo Creek Watershed was evaluated as part of the planning process. Based on this analysis, pre-settlement vegetation in the watershed consisted of approximately 83% prairie, 11% timber and the remainder wetlands, ponds and lakes. Following settlement, most of this land was converted to agricultural practices, followed by residential and commercial land uses.

THE PRESENT

Existing land use of the Buffalo Creek Watershed was determined using a combination of data from the Chicago Metropolitan Agency for Planning (CMAP) and 2012 aerial photo interpretation (see map below). The residential land use class accounts for the greatest area of the watershed with 9,394 Acres (54%). Total open space, including all open land (agricultural, private/public open space, wetlands, and water) comprises 3,026 acres or 17% of the watershed. Total developed land, including residential, commercial/retail/mixed use, government, institutional, industrial, office and research parks, transportation, and utilities accounts for 14,359 acres or 83% of the watershed.



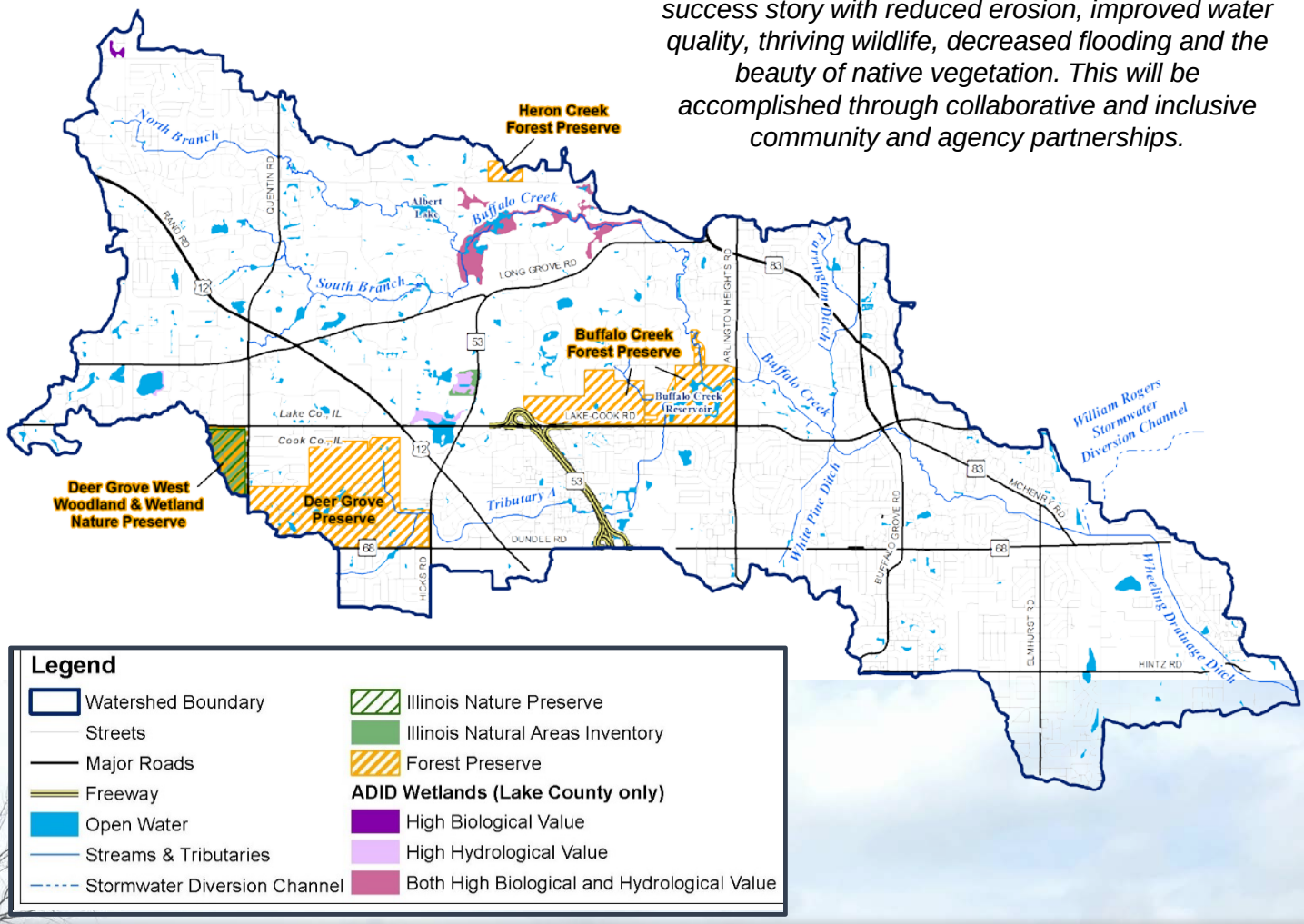
THE FUTURE

Future land use projections were based on a review of municipality future land use maps. Approximately 3.5% of the watershed is expected to change land use; 3.4% of the watershed that is currently considered pervious will be converted to imperious cover. This is primarily a result of the increase in commercial and industrial properties and single family residential land use, which is supported by the expected increase in household and population. Approximately 95% of the expected land use changes are expected to occur on agricultural and vacant land uses. The population density is expected to increase from 7.1 persons per acre to 8.8 persons per acre.

Vision Statement

Buffalo Creek will be a sustainable watershed success story with reduced erosion, improved water quality, thriving wildlife, decreased flooding and the beauty of native vegetation. This will be accomplished through collaborative and inclusive community and agency partnerships.

High Quality Natural Areas Map



WATERSHED PLAN GOALS

GOAL #1 WATER QUALITY: Improve and protect water quality (physical, biological, and chemical health), eliminate impairments and non-point source pollution, and implement land development and management practices to prevent pollution.

GOAL #2 MANAGE STORMWATER VOLUME AND REDUCE FLOODING: Reduce flooding and runoff through increased storage and infiltration of stormwater.

GOAL #3 NATURAL RESOURCES: Protect, enhance & restore natural resources through expanding environmental corridors, maintaining hydrology/buffers for high quality areas, and employing good natural resource management practices.

GOAL #4 GREEN INFRASTRUCTURE: Use a system of both site-level stormwater green infrastructure practices to reduce runoff and pollution, and regional greenways and trails to protect and connect the natural drainage system, natural resource areas and to provide recreational opportunities.

GOAL #5 SMART DEVELOPMENT: Guide new development and redevelopment design and practices to protect or enhance existing water resources, natural resources and open space.

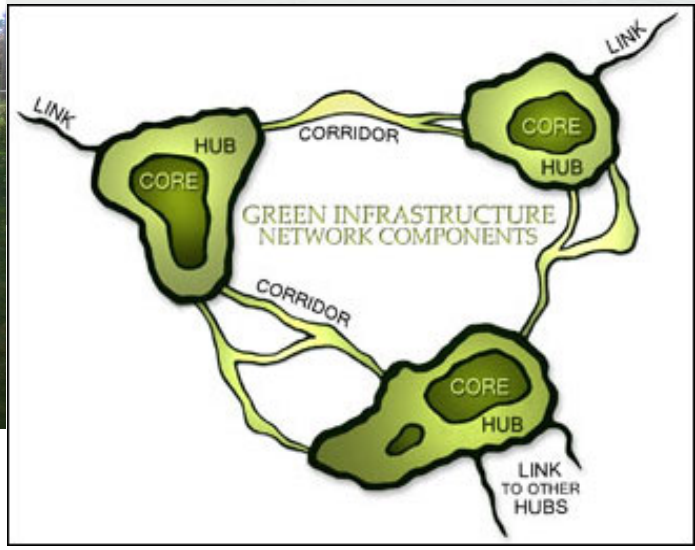
GOAL #6 STAKEHOLDER EDUCATION: Provide watershed stakeholders with the knowledge, skills and motivation needed to implement the watershed plan. Watershed stakeholders include (but are not limited to) residents, property owners, property owner associations, businesses and institutions, government agencies and jurisdictions, and developers.

GREEN INFRASTRUCTURE & YOUR BACKYARD

A Green Infrastructure Network is a connected system of natural areas and other open space that conserves natural ecosystem values and functions, sustains clean air and water, and provides a wide array of benefits to wildlife and people. The network is made up of hubs and linking corridors. Hubs generally consist of the largest and least fragmented areas such as Deer Grove Forest Preserve, Buffalo Creek Reservoir, large agricultural areas, and golf courses. Corridors are generally formed by smaller private residential parcels along developed reaches of Buffalo Creek and tributaries.

Corridors are extremely important because they provide biological conduits between hubs. However, most parcels forming corridors are not ideal green infrastructure until residents embrace the idea of managing stream corridors or creating backyard habitats.

Rain Barrel



Source: Chicago Wilderness Green Infrastructure Vision June 2012

Permeable Pavers

Rain Garden

Bioswale

If a portion of a stream runs through your backyard, here are some tips to help property manage your piece of the green infrastructure network:

1. **MANAGER FERTILIZER USE**
   Avoid over fertilizing lawns adjacent to streams and only use phosphorus when soil testing shows that it is necessary.
2. **NO DUMPING**
   Avoid dumping yard waste and clear heavy debris jams.
3. **REMOVE NON-NATIVE SPECIES**
   Identify and remove plants that are not native to the area (see photo guide, right).
4. **PLANT NATIVE VEGETATION**
   Deep rooted, native plants adapted to the Midwest climate can help control erosion by stabilizing banks.
5. **NATURAL STREAMS**
   Work with experts to restore degraded streams.

For more information, check out the Lake County Stormwater Management Commission's booklet, “Riparian Area Management: A Citizen's Guide,” at www.lakecountyil.gov/stormwater.

RAIN BARREL

DISCONNECTED DOWNSPOUT

Any property owner can improve green infrastructure. Create a safe place for wildlife by providing a few simple things such as food, water, cover, and a place for wildlife to raise their young. The National Wildlife Federation’s Certified Wildlife Habitat® and the Conservation Foundation’s Conservation@Home programs can help you get started. Golf courses can become certified through the Audubon Cooperative Sanctuary Program.

Creating a rain garden (see photo, above), or a small vegetated depression, to capture water is another way of promoting infiltration while beautifying your yard and providing additional habitat. Disconnecting your roof downspouts and capturing that runoff in rain barrels (see photo, above)not only reduces the amount of runoff entering streams, but also serves as a great source of water for irrigating your yard.

REMOVE THESE NON-NATIVE AND INVASIVE SPECIES

TEASEL

GARLIC MUSTARD

PURPLE LOOSESTRIFE

REED CNARY GRASS

BUCKTHORN

GET INVOLVED

Watershed planning and implementation is a voluntary effort. Active watershed stakeholders are needed to put this watershed plan into action. Buffalo Creek Clean Water Partnership is in place to support plan implementation and future planning efforts. Contact the Buffalo Creek Clean Water Partnership to learn how you can help. The Buffalo Creek Watershed-Based Plan can be downloaded at: www.buffalocreekcleanwater.org.

How can *YOU* help Buffalo Creek?

Residents & Businesses

- ❑ Reduce fertilizer use on lawns and only use phosphorus based on soil testing results.
- ❑ Use less salt on driveways, parking lots, and sidewalks during winter months.
- ❑ Use native landscaping to decrease watering needs and maintenance.
- ❑ Install rain gardens and use rain barrels to reduce stormwater runoff.
- ❑ Manage your backyard as part of the green infrastructure network.
- ❑ Attend meetings with decision makers to express concerns about the watershed.
- ❑ Build a sense of community in your neighborhood around Buffalo Creek and the watershed.
- ❑ Attend watershed education events.

Municipalities & Townships

- ❑ Adopt the Buffalo Creek Watershed-Based Plan and inform the public that a plan has been developed.
- ❑ Incorporate watershed plan goals and recommended actions into local comprehensive plans, zoning overlays, codes, and ordinances.
- ❑ Build “demonstration projects,” or large-scale water quality & public education projects, near public facilities.
- ❑ Distribute materials to help residents manage streams in their backyards.

Forest Preserve Districts

- ❑ Control non-native/invasive species and replace with native vegetation.
- ❑ Look for opportunities to acquire green infrastructure protection areas.

Cardno Shaping the Future

Buffalo Creek Clean Water Partnership

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

For more information contact:
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www.buffalocreekcleanwater.org
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All photos by Cardno unless otherwise noted.

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